

# ROTATION OF HOLOGRAPHIC DISC ( DEGREES )

	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
LASER 1		1			14		4		13		3		8		5		10		
LASER 2		6	12		9		15		2		16		1		14		4		
LASER 3		8		5		10		7		11		6		12		9		15	

NUMBERS IN BOXES REPRESENT FACETS BEING ILLUMINATED

t = 0

	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
	7		11		6		12		9		15		2		16			
	4	13		3		8		5		10		7		11		6		
	2		16		1		14		4		13		3					

FIG. 5A





## FACET LIGHT COLLECTION EFFICIENCY

$Z$  = DISTANCE FROM SCAN POINT ON LABEL ( MAX = FOCAL LENGTH PLUS 5 INCHES )

$A$  Area = AREA OF CORRESPONDING FACET

$R$  = RADIUS OF EFFECTIVE CIRCULAR APERTURE

$R_{pr}$  = RADIUS OF PROJECTED EFFECTIVE CIRCULAR APERTURE

$B$  = ANGLE BETWEEN OUTGOING BEAM AND THE DISC SURFACE

$\delta$  = HALF-ANGLE SUBTENDED BY EFFECTIVE PROJECTED CIRCULAR APERTURE

$E_L$  = LAMBERTIAN LIGHT COLLECTION EFFICIENCY

## F I G. 10K

$$R_{pr} := \sqrt{\frac{\chi^A \sin B}{\pi}} \quad \delta := \text{atan} \left[ \frac{R_{pr}}{Z} \right]$$

$$E_L := (\sin(\delta))^2$$

## F I G. 10L1

FOR FACET 16 :

$$Z := 70 \text{ inches}$$

$$\text{deg} = \frac{\pi}{180}$$

$$A := 4.7 \text{ square inches}$$

$$B := 48.2 \text{ deg}$$

$$E_L := 0.00022756$$

## F I G. 10L